

IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

Claims 1-58 (canceled)

59. (previously presented) A plant expression cassette, wherein said expression cassette expresses in-seed, with tissue specific expression, a non-degraded human lactoferrin, said cassette comprising a gene encoding human lactoferrin comprising the sequence SEQ ID NO: 23, said gene being operatively linked to DNA sequences comprising the promoter and the leader sequence of soybean protein 7S basic globulin.

Claim 60 (canceled)

61. (previously presented) The plant expression cassette according to claim 59, wherein said promoter has the sequence SEQ ID NO: 21.

Claim 62 (canceled)

63. (currently amended) The plant expression cassette according to claim 59, wherein said leader sequence encodes a signal peptide of the sequence SEQ ID NO: 26 is the sequence ~~SEQ ID NO: 13~~.

Claims 64-67 (canceled)

68. (previously presented) The plant expression cassette according to claim 59, wherein said gene encoding human lactoferrin has the sequence SEQ ID NO: 1.

69. (previously presented) A recombinant DNA vector comprising the plant expression cassette of claim 59.

Claim 70 (canceled)

71. (previously presented) The recombinant DNA vector according to claim 69, wherein said promoter has the sequence SEQ ID NO: 21.

Claim 72 (canceled)

73. (currently amended) The recombinant DNA vector according to claim 69, wherein said leader sequence encodes a signal peptide of the sequence SEQ ID NO: 26 ~~has the sequence SEQ ID NO: 13~~.

Claims 74-77 (canceled)

78. (previously presented) The recombinant DNA vector according to claim 69, wherein said gene coding for human lactoferrin has the sequence SEQ ID NO: 1.

79. (previously presented) A method for using the vector according to claim 69 for the transformation of vegetal cells comprising:

transferring said vector in competent agrobacterium cells; and
transforming said vegetal cells with the agrobacterium cells obtained from said transferring.

80. (previously presented) A vegetal cell including the vector of claim 69.

81. (previously presented) A cellular aggregation obtained from cells according to claim 80.

82. (previously presented) The cellular aggregation according to claim 81 wherein said aggregation is a callus, and wherein said callus is capable of regenerating a transgenic plant.

83. (previously presented) A transgenic plant, comprising the expression cassette of claim 59, said plant expressing in-seed the non-degraded protein human lactoferrin.

84. (previously presented) The transgenic plant according to claim 83, said plant being selected from the group consisting of solanaceae, cereals and leguminosae.

85. (previously presented) The transgenic plant according to claim 84, said plant being selected from the group consisting of soya, tobacco and rice.

Claims 86-90 (canceled)

91. (previously presented) A method for using the vector according to claim 69 for transformation of vegetal cells comprising:

subjecting said cells to bombing with a biolistic system; and
biolistically transforming said cells with said vector.

92. (withdrawn) A method for production of human lactoferrin extracts comprising:

collecting the seeds of the transgenic plant according to claim 83; and
extracting human lactoferrin from said seeds.

93. (withdrawn) A method of using the transgenic plant according to claim 83 for the production of non-degraded human lactoferrin comprising:

extracting said non-degraded human lactoferrin from seeds of said plant.

94. (withdrawn) A method for the production of human lactoferrin-containing flours comprising:

collecting the seeds of the transgenic plant according to claim 83; and
grinding said seeds.

95. (withdrawn) A method for the production of functional food containing human lactoferrin comprising:

collecting the seeds of the transgenic plant according to claim 83; and introducing said seeds or products of said seeds in food.

96. (withdrawn) The method according to claim 95, wherein said functional food is selected from the group consisting of vegetal milks, fruit juices, fruit homogenized foods and vegetable homogenized foods.

97. (withdrawn) The transgenic plant of claim 83 as a nutraceutical comprising human lactoferrin.

98. (currently amended) A plant expression cassette, wherein said expression cassette expresses non-degraded human lactoferrin in seed, said cassette comprising a gene encoding human lactoferrin comprising the sequence SEQ ID NO: 23, said gene being operatively linked to the sequence SEQ ID NO: 21 and a leader sequence encoding a signal peptide of the sequence SEQ ID NO: 26 encoded by SEQ ID NO: 13.

99. (previously presented) The plant expression cassette according to claim 98, wherein said leader sequence has the sequence SEQ ID NO: 13.

100. (previously presented) The plant expression cassette according to claim 98, wherein said gene encoding human lactoferrin has the sequence SEQ ID NO: 1.

101. (previously presented) A recombinant DNA vector comprising the plant expression cassette of claim 98.

102. (previously presented) The recombinant DNA vector according to claim 101, wherein said leader sequence has the sequence SEQ ID NO: 13.

103. (previously presented) The recombinant DNA vector according to claim 101, wherein said gene coding for human lactoferrin has the sequence SEQ ID NO: 1.

104. (previously presented) A method for using the vector according to claim 101 for the transformation of vegetal cells comprising:

transferring said vector in competent agrobacterium cells; and
transforming said vegetal cells with the agrobacterium cells obtained from said transferring.

105. (previously presented) A vegetal cell including the vector of claim 101.

106. (previously presented) A cellular aggregation obtained from cells according to claim 105.

107. (previously presented) The cellular aggregation according to claim 106 wherein said aggregation is a callus, and wherein said callus is capable of regenerating a transgenic plant.

108. (previously presented) A transgenic plant, comprising the expression cassette of claim 98 , said plant expressing in-seed the non-degraded protein human lactoferrin.

109. (previously presented) The transgenic plant according to claim 108, said plant being selected from the group consisting of solanaceae, cereals and leguminosae.

110. (previously presented) The transgenic plant according to claim 109, said plant being selected from the group consisting of soya, tobacco and rice.

111. (previously presented) A method for using the vector according to claim 101 for transformation of vegetal cells comprising:

subjecting said cells to bombing with a biolistic system; and
biolistically transforming said cells with said vector.

112. (previously presented) A method for production of human lactoferrin extracts comprising:

collecting the seeds of the transgenic plant according to claim 108; and
extracting human lactoferrin from said seeds.

113. (previously presented) A method of using the transgenic plant according to claim 108 for the production of non-degraded human lactoferrin comprising:
extracting said non-degraded human lactoferrin from seeds of said plant.

114. (previously presented) A method for the production of human lactoferrin-containing flours comprising:
collecting the seeds of the transgenic plant according to claim 108; and
grinding said seeds.

115. (previously presented) A method for the production of functional food containing human lactoferrin comprising:

collecting the seeds of the transgenic plant according to claim 108; and
introducing said seeds or products of said seeds in food.

116. (previously presented) The method according to claim 115, wherein said functional food is selected from the group consisting of vegetal milks, fruit juices, fruit homogenized foods and vegetable homogenized foods.

117. (previously presented) The transgenic plant of claim 108 as a nutraceutical comprising human lactoferrin.

118. (new) The plant expression cassette according to claim 63, wherein said leader sequence has the sequence SEQ ID NO: 13.

119. (new) The recombinant DNA vector according to claim 73, wherein said leader sequence has the sequence SEQ ID NO: 13.

120. (new) The transgenic plant according to claim 83, wherein said promoter has the sequence SEQ ID NO: 21.

121. (new) The transgenic plant according to claim 83, wherein said gene encoding human lactoferrin has the sequence SEQ ID NO: 1.

122. (new) The transgenic plant according to claim 83, wherein said leader sequence encodes a signal peptide of the sequence SEQ ID NO: 26.

123. (new) The transgenic plant according to claim 83, wherein said leader sequence has the sequence SEQ ID NO: 13.